UNITED STATES
FOREST SERVICE

2004 BRIDGE INSPECTION

APALACHICOLA NATIONAL FOREST
BRIDGE NO. 115-02.5
RIVER STYX BRANCH

STATE OF MARYLAND
MICHAEL KEVIN RICE
NO. 16901
REGISTERED
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Michael K. Rice

Michael K. Rice, P.E.

2/20/04
Date

This inspection report was prepared under my supervision. The condition data and recommendations contained within this report are based on a visual inspection of accessible portions of the existing structure. No responsibility is accepted for the existence of latent defects that cannot be detected during visual inspection.

KCI TECHNOLOGIES

Engineers, Scientists, and Planners

10 North Park Drive

Hunt Valley, MD 21030-1846

In Association with Mercado Consultants, Inc.

2004 USFS BRIDGE INSPECTION

APALACHICOLA NATIONAL FOREST

BRIDGE NO. 115-02.5
RIVER STYX BRANCH

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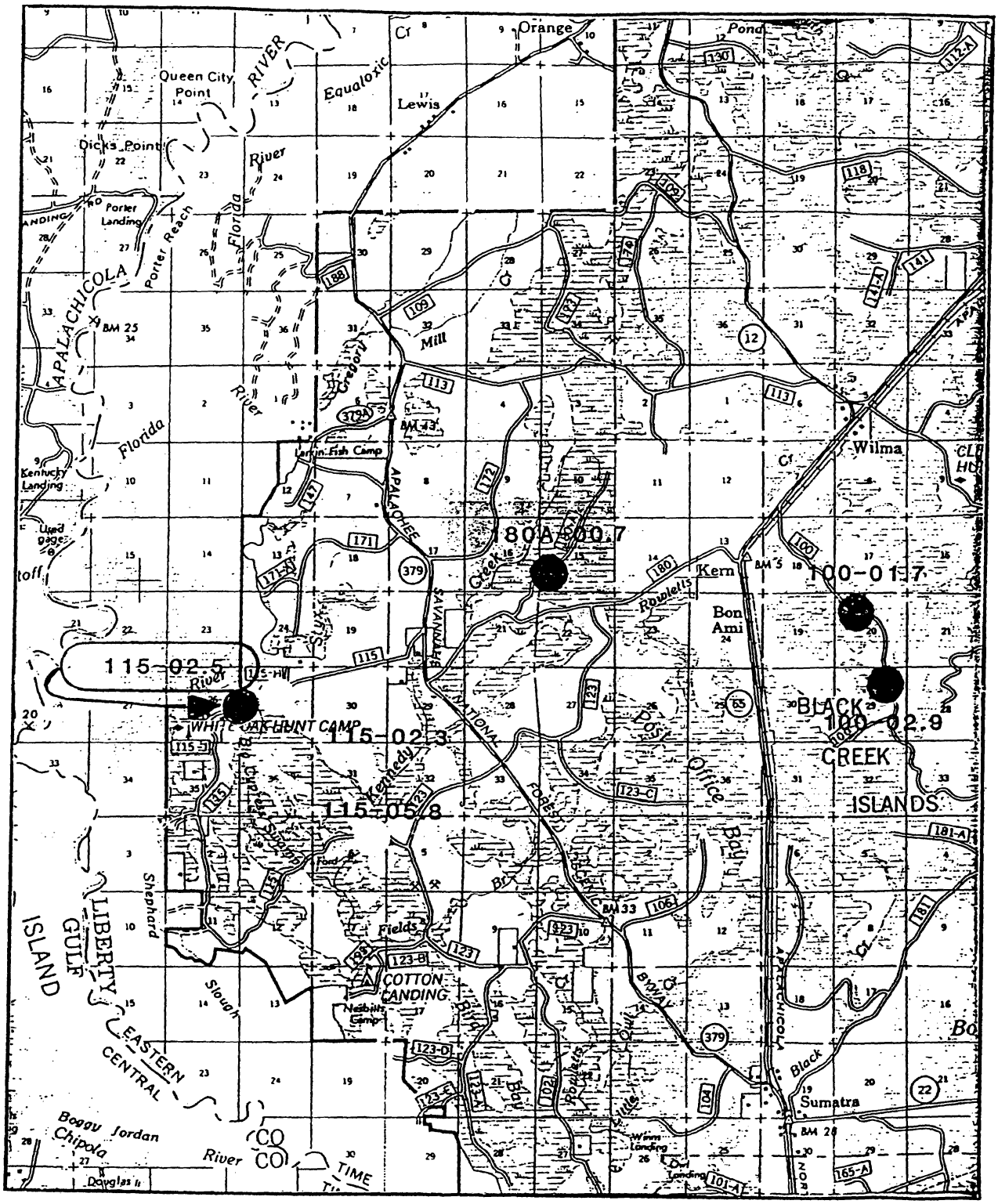

LOCATION MAP

1 INCH = 1 MILE

REPORT SUMMARY

BRIDGE NO. 115-02.5
RIVER STYX BRANCH

Description

Bridge No. 115-02.5 is a three span timber beam bridge constructed in 1937 (see Photos 1-6). The deck was replaced in 1982. The bridge has an overall length of 46'-0"± with a curb to curb width of 14'-2"±. The superstructure consists of a timber plank deck supported by nine timber stringers. The substructure consists of timber pile bents with three piles per bent and timber sheeting at the end bents. The bridge railing consists of timber rails with timber posts. There are no approach guardrails. The bridge is currently not posted. The bridge inspection was performed on February 20, 2004.

Condition Summary

Overall, the bridge is in poor condition (SI&A condition rating 4). The following is a summary of the bridge inspection findings:

1. The timber rails, posts, and curbs all have areas of severe decay (see Photo 7).
2. Several timber stringers have areas of decay at the bearing areas (see Photos 8 and 9). Stringer 9 in Spans 1 and 2 has areas of decay along the full length (see Photo 10).
3. The timber sheeting at the Northwest, Northeast and Southwest Wingwalls has heavy decay with loss of fill (see Photo 11). The outer timber piles at the Northwest and Southwest Wingwalls are completely rotten.
4. The bottom timber sheeting board at the both abutments has severe decay with loss of fill. All abutment sheeting was decayed at the ends (see Photo 11).
5. The top of Bent Cap 1 is decayed up to 3" deep for the full length (see Photo 12). The top of Bent Cap 2 is decayed up to 2½" deep between Stringers 4 and 5. Bent Cap 2 also has a 6" high x 10" long 3½" deep area of decay at the top of the west face between Stringers 5 and 6 (see Photo 13).
6. Pile 1 at the West Abutment has a 6" deep area of decay for the full height of the north face (see Photo 14). Pile 3 has 9" high x ½" deep area of decay for the full circumference at the waterline.
7. Pile 1 at the East Abutment has a 2'-0" x 1'-0" x 1" deep area of decay on the west face at the waterline. Pile 2 has a 1'-0" x 9" wide x 1" deep area of decay on the south face at the waterline.
8. There is moderate debris and vegetation within the channel.
9. There are small potholes at both approach roadway transitions.
10. There are no approach guardrails.

Recommendations

1. Replace the bridge. Traffic safety upgrades such as approach guardrails should be included with this project.

Posting Recommendation

The decay throughout the structure, particularly the timber stringers and caps, is significant enough to affect the load carrying capacity of the bridge. Load ratings should be performed to determine a safe posting level that accounts for the decay. Until the load ratings are performed, it is recommended to post the bridge for 20 Tons gross load.

2004 USFS BRIDGE INSPECTION - APALACHICOLA NATIONAL FOREST
BRIDGE NO. 115-02.5 - RIVER STYX BRANCH

Photo 1 – West Approach.

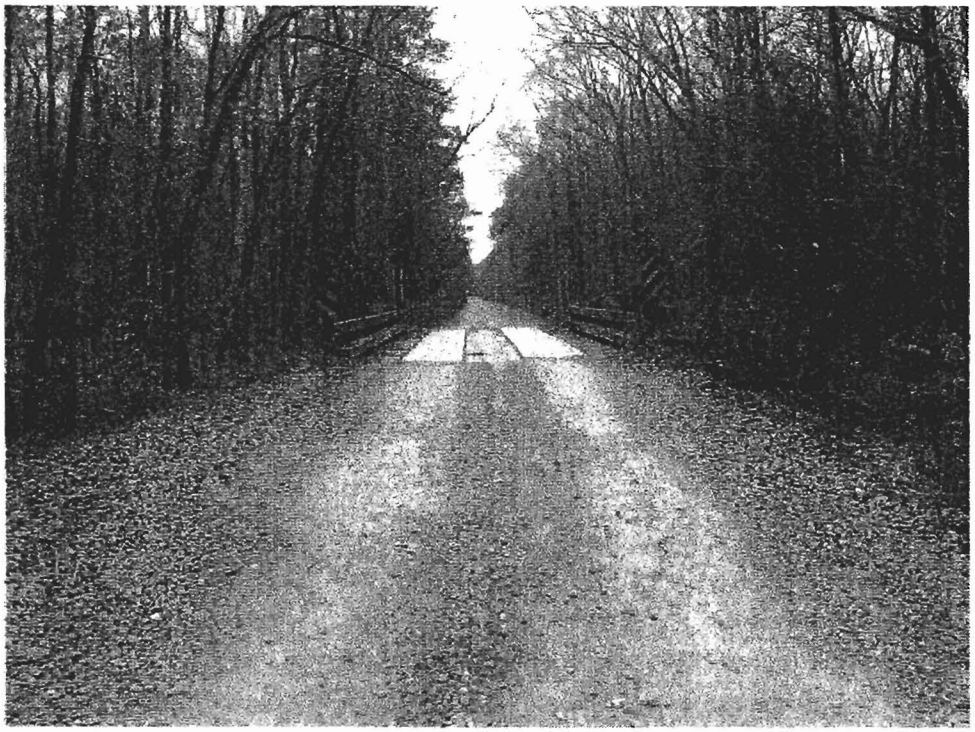

Photo 2 – East Approach.

Photo 3 – North Elevation.

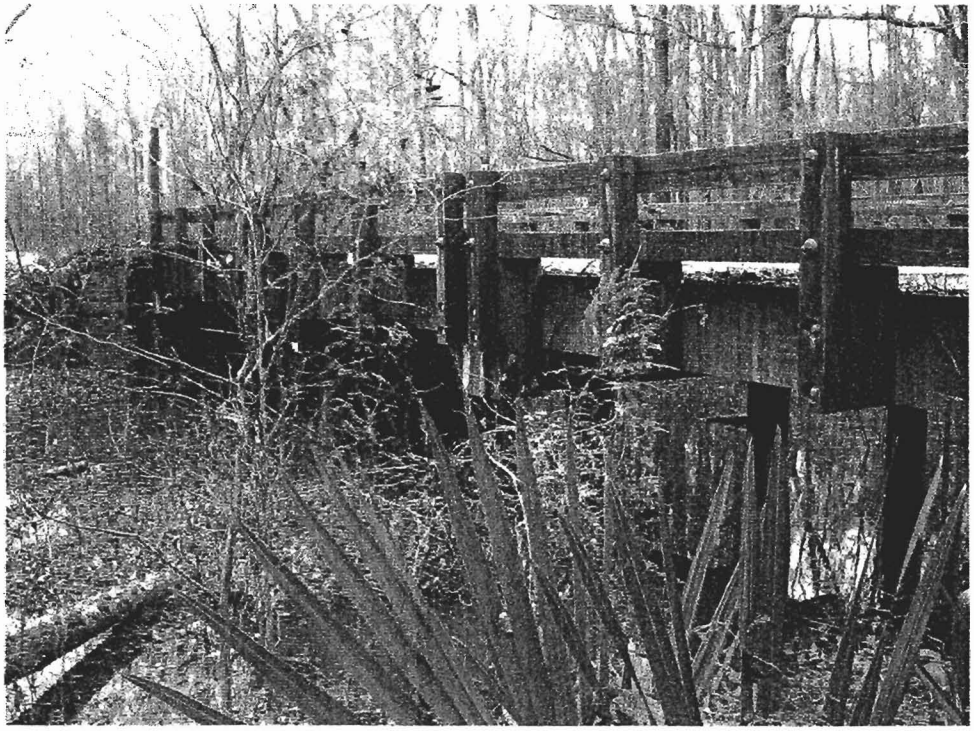

Photo 4 – South Elevation.

Photo 5 – Looking North (Upstream).

Photo 6 – Looking South (Downstream).

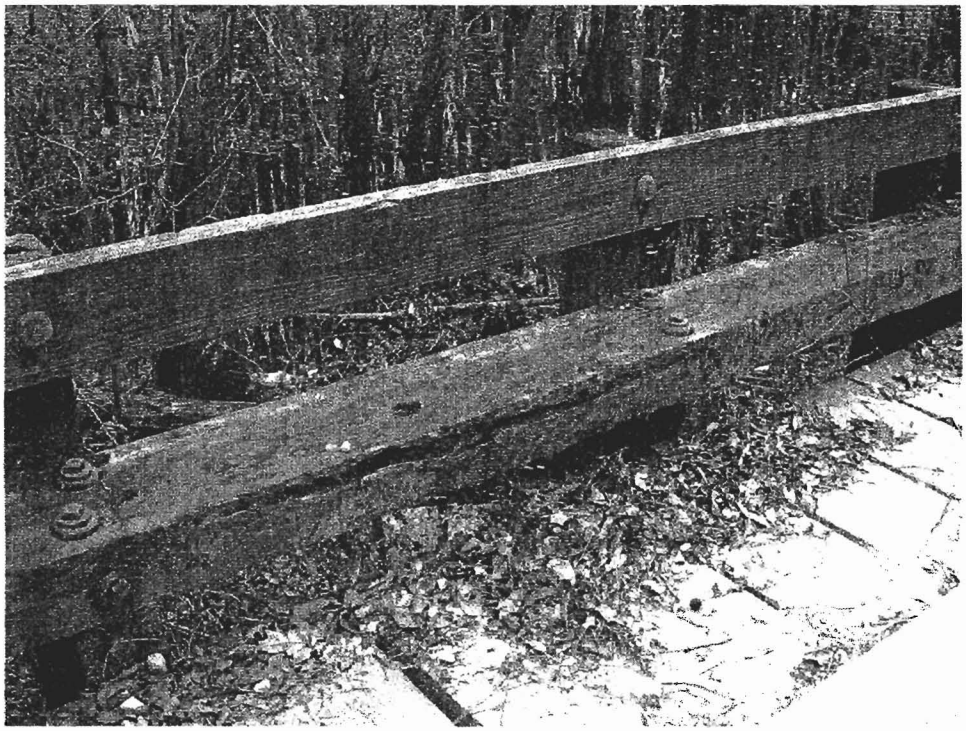

Photo 7 – South Curb in Span 3.

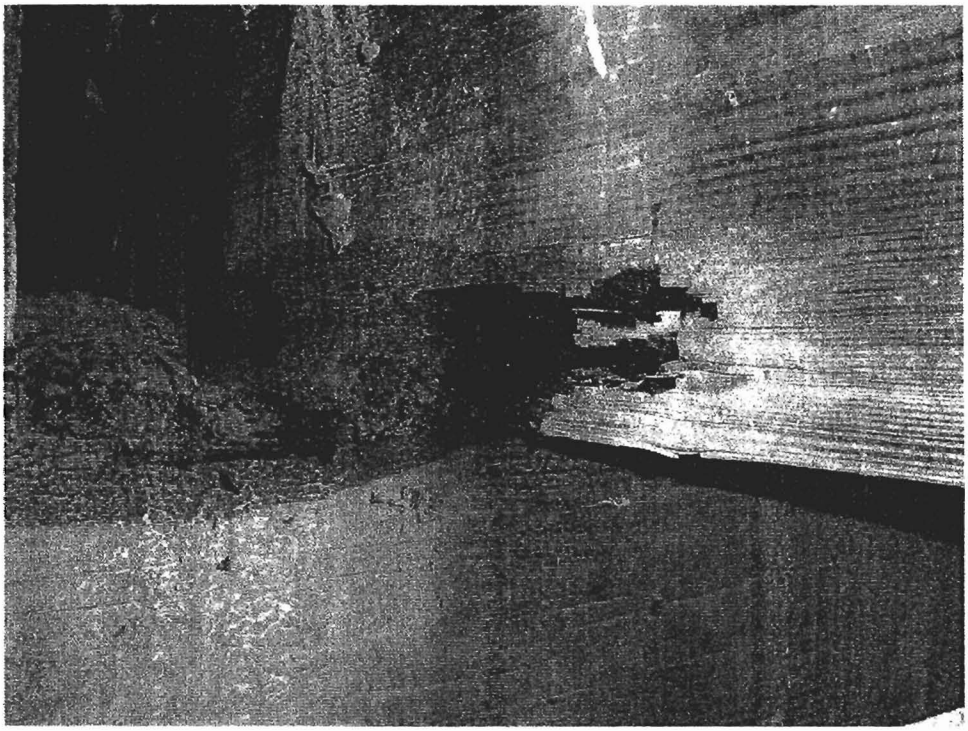

Photo 8 – Stringer 5 in Span 2 at Bent 1.

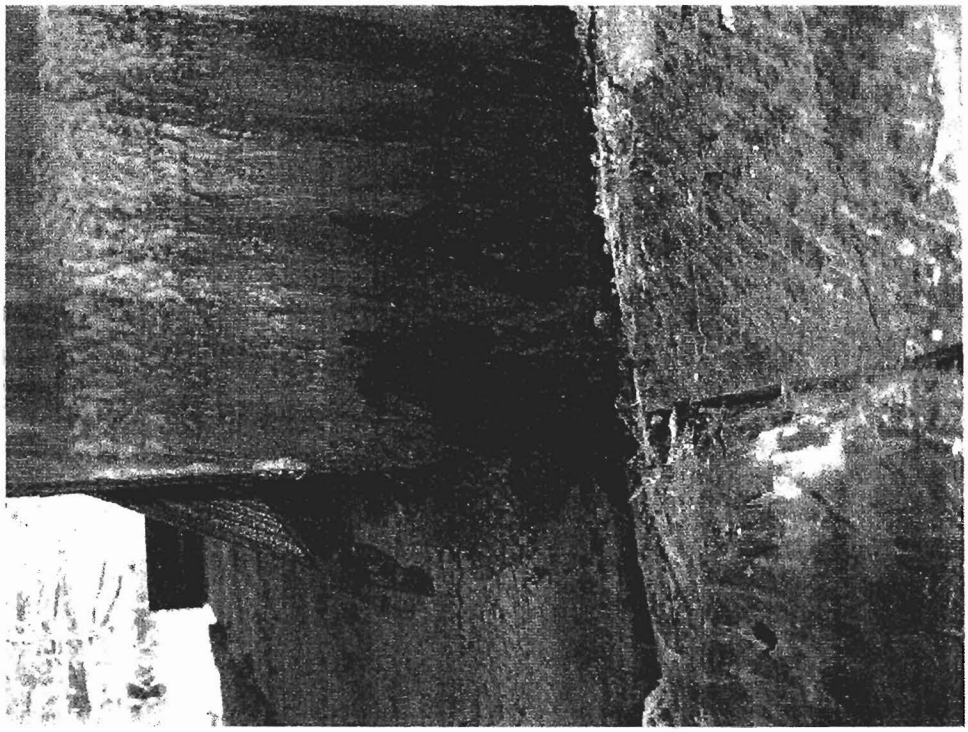

Photo 9 – Stringer 4 in Span 2 at Bent 1.

Photo 10 – Stringer 9 at Bent 1.

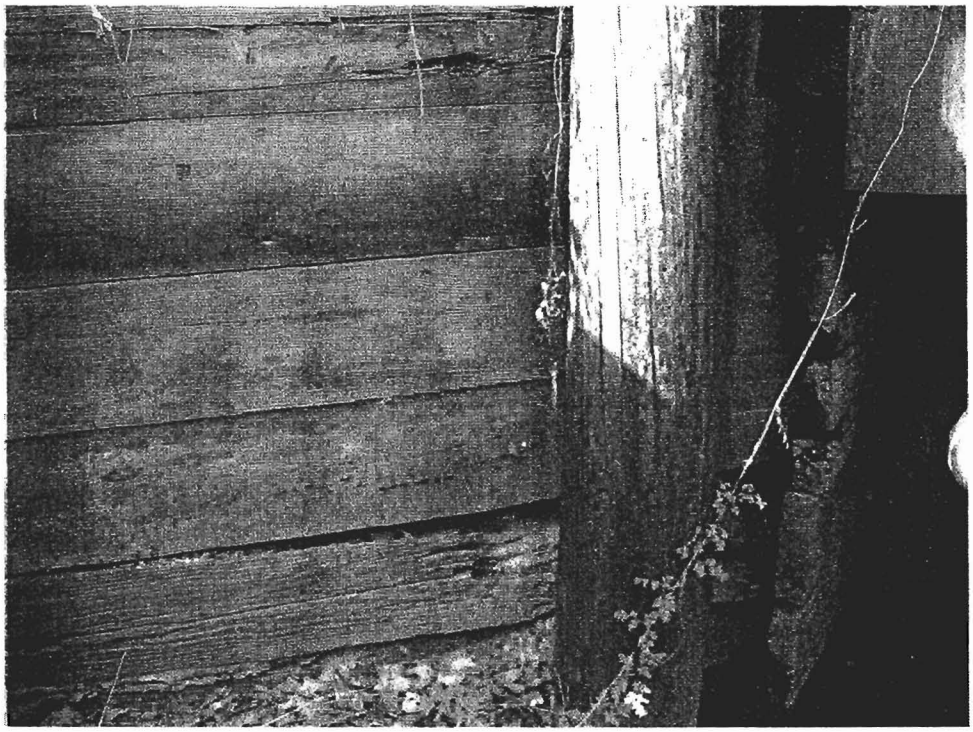

Photo 11 – Decayed Sheeting in the Southwest Wingwall and at the South End of the West Abutment. Note Loss of Fill.

Photo 12 – Top of Bent Cap 1 Between Stringers 7 and 8.

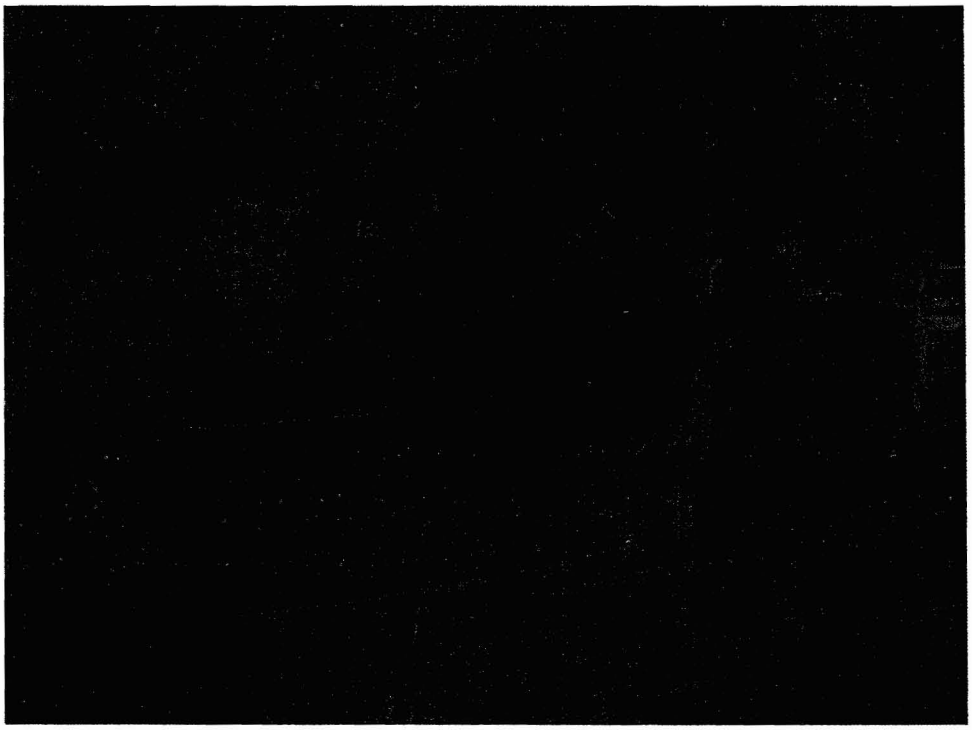

Photo 13 – West Face of Bent Cap 2 Between Stringers 5 and 6.

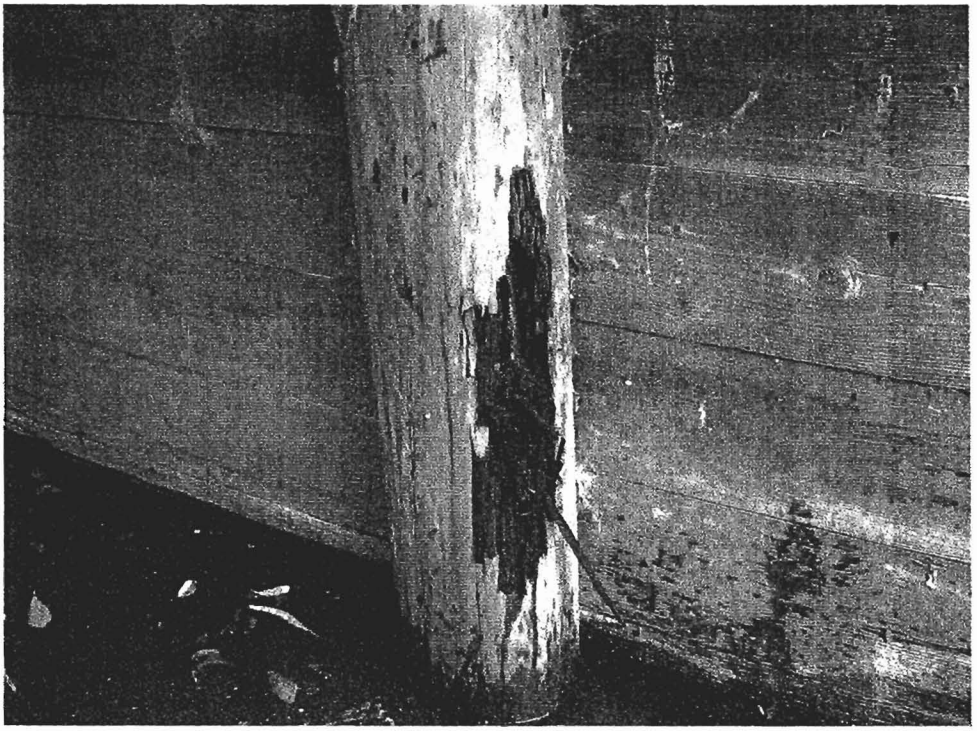

Photo 14 – Pile 1 at the West Abutment.

USDA FOREST SERVICE

2004 USFS STRUCTURAL CONDITION INSPECTION REPORT

Forest: Apalachicola

Bridge No.: 115-02.5 Inspection Crew: MG/CF Date: 2/20/2004

Name: Route 115 over River Styx Branch

Bridge Type: Timber Beams with Timber Plank Deck Year Built: 1937/82

58. DECK

		CONDITION RATING
1.	Wearing Surface	7
2.	Deck	7
3.	Deck Joints	N/A
4.	Rideability	7
5.	Curbs & Sidewalks	5
6.	Drainage System	7
7.	Cleanliness	7
8.	Utilities	7
9.	Paint	N/A
10.	Bridge Railing	4
Summary Condition Rating (58)		**7**

58.1- Minor wear on longitudinal timber running boards with splintering along the edges.

58.5- East end of north timber curb has severe decay for a 10' length with 3" pick penetrations. Both curbs have random checks and moss. South curb has a 4' long area of severe decay at Span 3 with 3" pick penetrations.

58.10- The timber rails and posts has splits and checks throughout. The rails are typically dry with areas of decay. 4" deep decay at top of 2nd post from east at south rail and on top of 4th post from east at north rail. North rail has severe decay for an 8' length in Span 1 with 3" pick penetration.

59. SUPERSTRUCTURE

1.	Bearing Devices	N/A
2.	Longitudinal Beams	4
	a. Diaphragms	N/A
	b. Bracing	N/A
3.	Transverse Beams	N/A
4.	Prestress Slabs	N/A
5.	Trusses	N/A
	a. Chords	N/A
	b. Diagonals	N/A
	c. Verticals	N/A
6.	Paint	N/A
7.	Deflection Under Load	7
8.	Vibrations Under Load	7
Summary Condition Rating (59)		**4**

59.2- Timber stringers have minor splintering at bottom edges at random locations. Stringer 6 in Span 1 decayed at the West Abutment bearing. Stringer 9 in Spans 1 and 2 has areas of decay for the full length.
Stringers 2, 4, 5 and 6 in Span 2 are rotten at the ends over Bent 1. Stringer 5 has 1 1/2" pick penetrations in the bottom and sides at Bent 1. Stringer 4 has 4" deep decay for the full width of the bottom at Bent 1. The bottom of Stringers 4 and 5 are decayed at Bent 2.
Stringer 5 in Span 3 was rotten at the end over Bent 2.

CODING AND APPRAISAL GUIDELINES

The bridge component ratings found in this report are taken from the FHWA's, "Recording and Coding Guide for the Structural Inventory and Appraisal of the Nation's Bridges", dated July 1993. The numerical rating systems are as follows:

a. Traffic Safety Features

Code	Description
0	Inspected feature DOES NOT meet currently acceptable standards or a safety feature is required and NONE IS PROVIDED.
1	Inspected feature MEETS currently acceptable standards.
N	NOT APPLICABLE

b. Superstructure, Substructure, Channel and Approach

Code	Description
N	NOT APPLICABLE
9	EXCELLENT CONDITION
8	VERY GOOD CONDITION - no problems noted.
7	GOOD CONDITION - some minor problems.
6	SATISFACTORY CONDITION - structural elements show some minor deterioration.
5	FAIR CONDITION - all primary structural elements are sound but may have minor section loss, cracking, spalling or scour.
4	POOR CONDITION - advanced section loss, deterioration, spalling or scour.
3	SERIOUS CONDITION - loss of section, deterioration, spalling or scour have seriously affected primary structural components. Local failures are possible.
2	CRITICAL CONDITION - advanced deterioration of primary structural elements. Fatigue cracks in steel or shear cracks in concrete may be present or scour may have removed substructure support. Unless closely monitored it may be necessary to close the bridge until corrective action is taken.
1	"IMMINENT" FAILURE CONDITION - major deterioration or section loss present in critical structural components or obvious vertical or horizontal movement affecting structure stability. Bridge is closed to traffic but corrective action may put it back in light service.
0	FAILED CONDITION - out of service - beyond corrective action.

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Name: Route 115 over River Styx Branch

Bridge Type: Timber Beams with Timber Plank Deck Year Built: 1937/82

60. SUBSTRUCTURE

		CONDITION RATING
Abutments:		
1.	Bearing Seats	5
2.	Wing Walls	4
3.	Backwalls or Bulkheads	N/A
4.	Breast wall and Caps	5
5.	Weep Holes	N/A
6.	Footings	N/A
7.	Piles & Bracing	5
8.	Erosion/ Scour	8
9.	Settlement	8
Piers and Bents:		
10.	Bearing Seats	4
11.	Caps	4
12.	Columns or Walls	N/A
13.	Footings	N/A
14.	Piles & Bracing	5
15.	Scour / Erosion	7
16.	Settlement	8
Summary Condition Rating (60)		4

60.2- The outer timber pile at the Northwest Wingwall is completely rotten. The timber sheeting also has heavy decay with loss of fill. The sheeting at the Northeast Wingwall has heavy decay with loss of fill. The outer pile at the Southwest Wingwall is completely rotten and the sheeting has heavy decay with loss of fill.

60.4- Bottom timber sheeting board at the both abutments has severe decay throughout with loss of fill. Sheeting at both abutments has severe decay at ends.

60.4 and 11- All timber bent caps are soft at the surface and have heavy debris on top. The top of Bent Cap 1 is decayed up to 3" deep for the full length. The top of Bent Cap 2 is decayed up to 2 1/2" between Stringers 4 and 5. Bent Cap 2 has a 6" high x 10" long x 3 1/2" deep area of decay at the top of the west face between Stringers 5 and 6.

60.14- All timber piles are soft at the surface with 1/2" pick penetrations. Pile 1 at the West Abutment has a 6" deep area of decay for the full height of the north face. Pile 3 has a 9" high x 1/2" deep area of decay for the full circumference at the waterline. The piles at the bents had 1/2" pick penetrations and a few small areas of shallow decay. Pile 1 at the East Abutment has a 2'-0" x 1'-0" x 1" deep area of decay on the west face at the waterline. Pile 2 has a 1'-0" x 9" wide x 1" deep area of decay on the south face at the waterline.

61. CHANNEL AND CHANNEL PROTECTION

1.	Channel Scour/Erosion	7
2.	Channel Protection	7
3.	Vegetation	6
4.	Waterway Obstruction/Drift	6
5	Normal Velocity	
	[ ] High [ ] Med [X] Low	
Summary Condition Rating (61)		7

61.3 and 4- Moderate debris and vegetation within the channel.

USDA FOREST SERVICE

2004 USFS STRUCTURAL CONDITION INSPECTION REPORT

Forest: Apalachicola

Bridge No.: 115-02.5 Inspection Crew: MG/CF Date: 2/20/2004

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Bridge Type: Timber Beams with Timber Plank Deck Year Built: 1937/82

71. WATERWAY ADEQUACY

Opening	(Good)	Fair	Poor	
Alignment	(Good)	Fair	Poor	
Frequency of Overtopping	Remote	(Slight)	Occasional	Frequent

Overall Appraisal Rating (71) 7

72. APPROACH ROADWAY ALIGNMENT

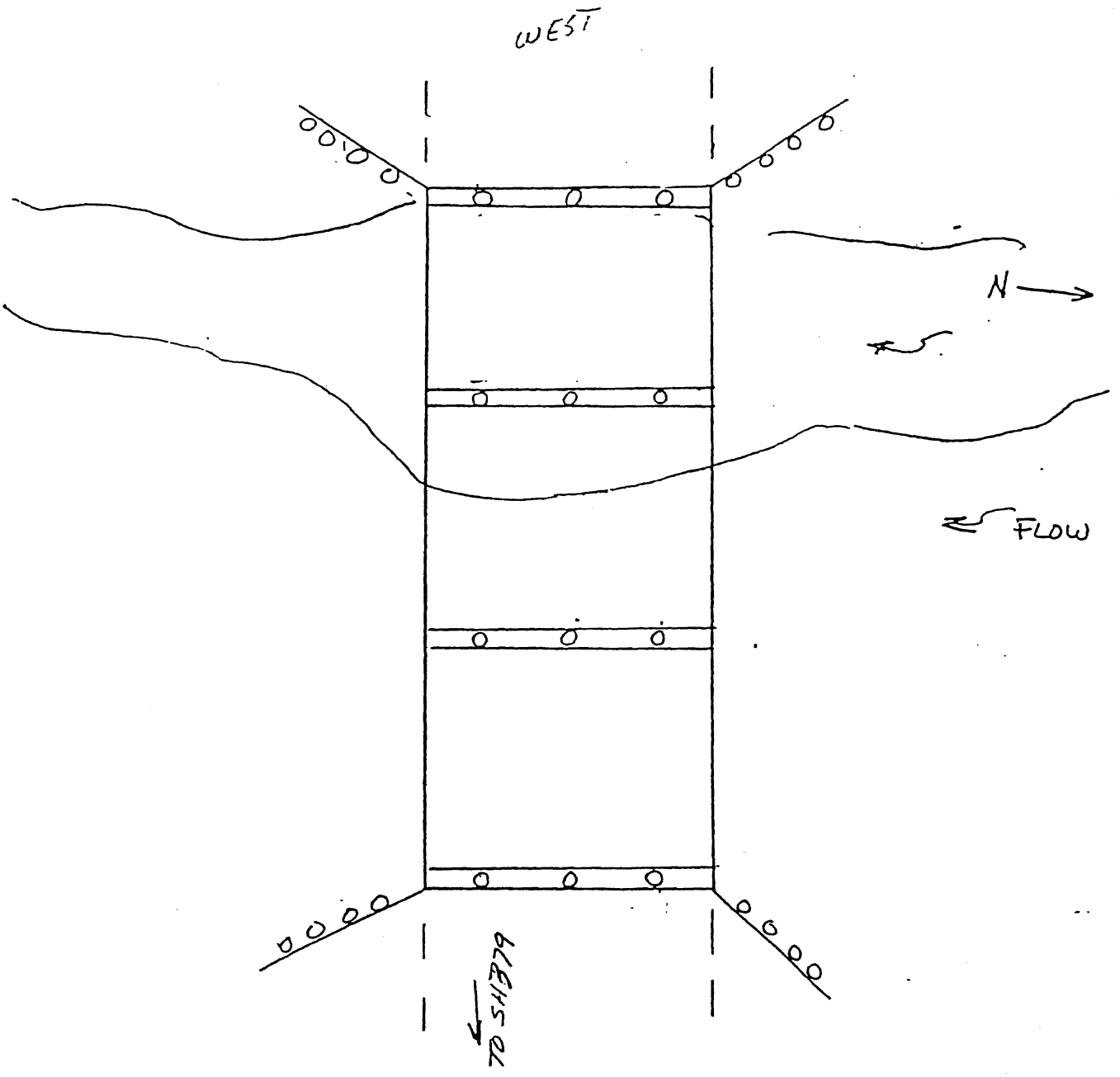
		CONDITION RATING
1.	Surfacing: Sand	7
2.	Shoulder Embankment	6
3.	Roadway Embankment	7
4.	Approach Slabs	N/A
5.	Approach Alignment	8
	a. Vertical	7
	b. Horizontal (incl. Sight distance)	8
Summary Condition Rating (72)		7

72.1 and 5- Both approaches are straight and flat with small potholes at both transitions.

36. TRAFFIC SAFETY FEATURES

		RATING
Bridge Railings:	Timber rails and posts.	0
Rail Transitions:	None.	0
Approach Guardrail:	None.	0
Approach Rail Ends:	None.	0
Signing:	Hazard Object Markers and "One Lane Bridge".	N/A

115 - 2.5 Treated Timber Bridge



KCI TECHNOLOGIES

OFFICES OF KCI TECHNOLOGIES, INC.

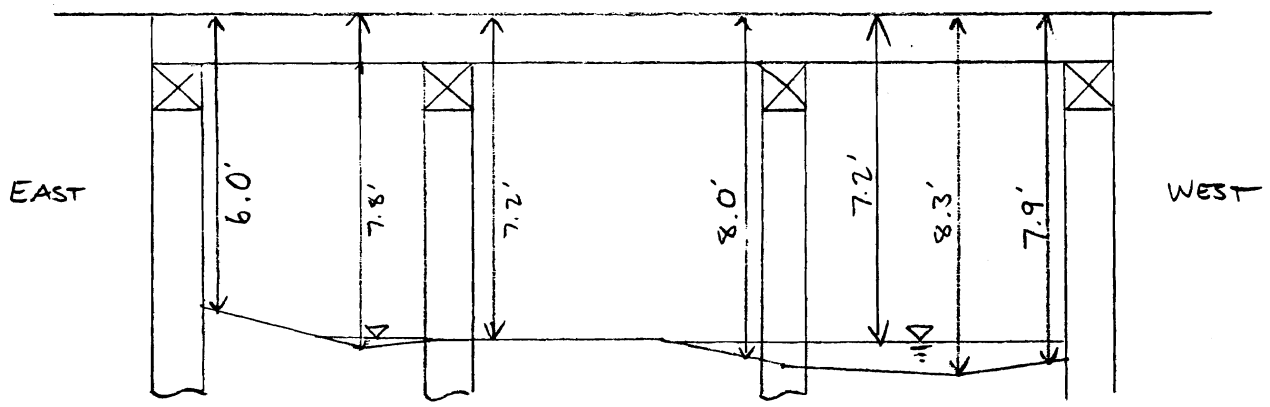
3105 LORENA AVENUE
3220 TILLMAN DRIVE, SUITE 104
7739 FROSCH ROAD
211 ROANOKE STREET, SUITE 12
387-A CORNELIUS STREET
10 NORTH PARK DRIVE
14502 GREENVIEW DRIVE, SUITE 424
5001 LOUISE DRIVE, SUITE 201
240 SCOTT AVENUE, SUITE 2
153 E. CHESTNUT HILL RD., SUITE 102
6525 THE CORNERS PARKWAY, SUITE 400
1500 MARKET STREET, EAST TOWER
3424 WILLIAM PENN HWY., SUITE 230
4601 SIX FORKS ROAD, SUITE 200
9211 ARBORETUM PARKWAY, SUITE 100
1320B SEYMOUR DR.
9205 STATE ROUTE 43, #104
10150 HIGHLAND MANOR DR., SUITE 120
1200 G STREET, NW, SUITE 800

BALTIMORE, MD 21230
BENSALEM, PA 19020-2083
CHARLOTTE, NC 28208
CHRISTIANSBURG, VA 24073
HILLSBOROUGH, NC 27278
HUNT VALLEY, MD 21030-1846
LAUREL, MD 20708
MECHANICSBURG, PA 17055-6912
MORGANTOWN, WV 26505
NEWARK, DE 19713
NORCROSS, GA 30092
PHILADELPHIA, PA 19102
PITTSBURGH, PA 15235
RALEIGH, NC 27609-5210
RICHMOND, VA 23236
SOUTH BOSTON, VA 24592
STREETSBORO, OH 44241
TAMPA, FL 33610
WASHINGTON, DC 20005

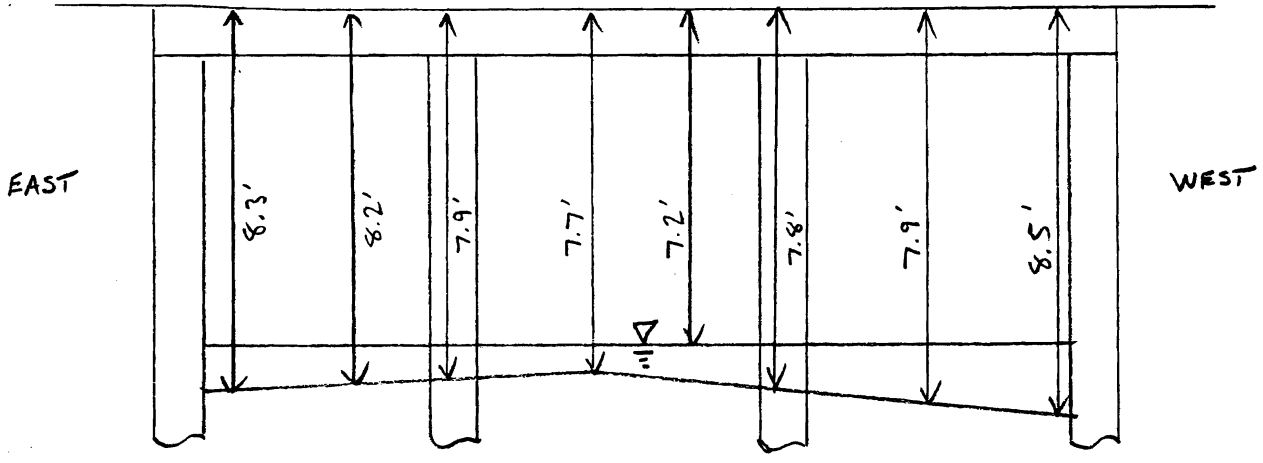
DESIGN MG/CF DATE 2/20/04 SUBJECT _____ J.O. _____

CHECK _____ DATE _____ SHEET ____ OF ____

115 - 2.5



DOWNSTREAM PROFILE



UPSTREAM PROFILE